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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,313	09/03/2003	**Robert M. Guidash**	86321PCW	4417

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EXAMINER	
NGUYEN, LUONG TRUNG	
ART UNIT	PAPER NUMBER
2622	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/654,313	GUIDASH, ROBERT M.	
	Examiner	Art Unit	
	LUONG T. NGUYEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8-13 and 16-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8-13 and 16-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/09/2009 has been entered.

Response to Arguments

2. Applicant's arguments filed on 09/09/2009 with respect to claims 8, 17, 18, 21-23 have been fully considered but they are not persuasive.

The allowability of independence claims 1 and 9, as made in Office Action on 06/09/2009, are withdrawn since Applicant amended independence claims 1 and 9 by canceled the allowable subject matter of claims; the amended claims 1 and 9 are still read on Morris and Abe references.

In re pages 7-8, Applicant argues that Morris and Tanaka are incompatible in that Morris teaches different integration times and Tanaka identical integration times. Therefore, Morris and Tanaka does not disclose "an integration time control line for each row of pixels, wherein each integration time control line is routed to a portion of the pixels in one row and to a portion of the pixels in an adjacent row" as amended in claims 8 and 17.

In response, noted that Morris discloses that the imager 140 independently sets the duration of the integration interval that is used by each group 113; due to this independent control of the integration durations, the exposure time of each different group 113 may be adjusted to accommodate the brightness of a different portion of the optical image (figure 5, column 3, lines 15-21). This indicates that the exposure time of each different group 113 may be the same; this shows that Morris and Tanaka are compatible since both teach identical integration times. Therefore, the Examiner still considers that Morris and Tanaka does disclose "an integration time control line for each row of pixels, wherein each integration time control line is routed to a portion of the pixels in one row and to a portion of the pixels in an adjacent row to provide an output signal values" as amended in claim 8. Morris discloses that the imager 140 independently sets the duration of the integration interval that is used by each group 113; due to this independent control of the integration durations, the exposure time of each different group 113 may be adjusted to accommodate the brightness of a different portion of the optical image (figure 5, column 3, lines 10-29; 55-62). And Takada et al. discloses a solid-state image pickup device, which includes an integration-time control line Lint for each row of pixels Gmm (figures 1, 4-6, column 12, lines 1-57).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 9-13, 16, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 6,665,010) in view of Abe (US 6,747,698).

Regarding claims 1, 9, 24, Morris et al. discloses a camera (digital camera 12, figure 1, column 1, lines 8-20) comprising:

an image sensor (digital imager 140, figure 5) comprising:

a plurality of pixels arranged in an array of rows and columns (an array of pixel sensing unit 118, figure 5, column 3, lines 5-30);

a color filter pattern (one group of pixels is associated with red color or green color, figure 5, column 3, lines 30-52) spanning at least a portion of the pixels, wherein the color filter pattern forms a plurality of color filter kernels (group of four pixels 113a, 113b, 113c, 113d, one group has red pixel color, another group has green pixel color, figure 5, column 3, lines 5-40) wherein the kernels are arranged in at least two different uniformly distributed sets (each group of pixels includes 2x2 pixels, figure 5, column 3, lines 5-40); and

(c) a mechanism for independent control of controlling an integration time of each uniformly distributed set, wherein a first uniformly distributed set has a first integration time and a second uniformly distributed set has a second integration time that is different from the first integration time (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, column 3, lines 5-30).

Morris et al. and Takada et al. fail to specifically disclose the plurality of color filter kernels having at least one color of every color in the color filter pattern in a predetermined arrangement with an identical pattern of colors in each color filter kernel. However, Abe teaches a digital camera 10 in which the color filter 13 is divided into a 2x2 pixel matrix M1, each pixel

matrix M1 has the same plurality of colors R, G, B (figure 2, column 3, lines 51-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Morris et al. by the teaching of Abe in order to reduce the chromatic blur which occurs in a reproduced image because of the interpolating process (column 1, lines 40-43).

Regarding claims 2, 10, Abe discloses wherein the color filter pattern is a Bayer color filter pattern (figure 2, column 1, lines 10-21, column 3, lines 51-60).

Regarding claims 3, 11, Morris et al. discloses wherein the color filter pattern is a 2x2 kernel (group of four pixels, figure 5, column 3, lines 5-30).

Regarding claims 4, 12, Morris et al. discloses wherein the at least two different uniformly sets comprises an alternating pattern of two lines of 2x2 kernels (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, column 3, lines 5-30).

Regarding claims 5, 13, Morris et al. discloses wherein the at least two different uniformly distributed set comprise 2x2 kernels (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, column 3, lines 5-30).

Regarding claim 16, Morris et al. discloses a mechanism that reads out at least a subset of the plurality of pixels and uses the signal values obtained from the readout to determine the

integration times of the plurality of pixels (integration times for different groups of pixels are independently controlled (column 3, lines 5-50).

5. Claims 8, 17-18, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 6,665,010) in view of Takada et al. (US 6,831,691).

Regarding claims 8, 17, Morris et al. discloses a camera (digital camera 12, figure 1, column 1, lines 8-20) comprising:

an image sensor (digital imager 140, figure 5) comprising:

a plurality of pixels arranged in an array of rows and columns (an array of pixel sensing unit 118, figure 5, column 3, lines 5-30);

the output signal values having signals that are generated from pixels within at least two physically separate rows within the array (the signal values that are generated from the array of pixel sensing units 118 are transferred to output interface 128, figure 5, column 7, lines 9-31). Noted that the signal values that are generated from the array of pixel sensing units 118 (plurality of groups 113, each group 113 comprises of 2x2 pixel sensing units 118), which corresponds to the output signal values having signals that are generated from pixels within at least two physically separate rows within the array, are transferred to output interface 128, figure 5, column 7, lines 9-31.

Morris et al. fails to specifically disclose an integration time control line for each row of pixels, wherein each integration time control line is routed to a portion of the pixels in one row and to a portion of the pixels in an adjacent row to provide an output signal values. However, Morris discloses that the imager 140 independently sets the duration of the integration interval

that is used by each group 113; due to this independent control of the integration durations, the exposure time of each different group 113 may be adjusted to accommodate the brightness of a different portion of the optical image (figure 5, column 3, lines 10-29; 55-62). And Takada et al. discloses a solid-state image pickup device, which includes an integration-time control line Lint for each row of pixels Gmm (figures 1, 4-6, column 12, lines 1-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Morris et al. by the teaching of Takada et al. to provide a solid-state image pickup device which has the advantage of providing high-quality still images even of moving objects with a simple structure (column 12, lines 54-57).

Regarding claims 18, 23, Morris et al. discloses:

memory (memory 263, figure 12, column 7, lines 37-49);

means for writing the output signal values into two row locations the memory for each row of pixels, wherein the output signal values are reconstructed in the memory (the signals that are readout from imager 140 are stored in memory 263, figure 12, column 7, lines 37-49).

6. Claims 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 6,665,010) in view of Abe (US 6,747,698) further in view of Takada et al. (US 6,831,691).

Regarding claims 19, 20, Morris et al. discloses output signal values having signals that are generated from pixels within at least two physically separate rows within the array (the signal values that are generated from the array of pixel sensing units 118 are transferred to output

interface 128, figure 5, column 7, lines 9-31). Noted that the signal values that are generated from the array of pixel sensing units 118 (plurality of groups 113, each group 113 comprises of 2x2 pixel sensing units 118), which corresponds to the output signal values having signals that are generated from pixels within at least two physically separate rows within the array, are transferred to output interface 128, figure 5, column 7, lines 9-31.

Morris et al. and Abe fail to specifically disclose an integration time control line for each row of pixels, wherein each integration time control line is routed to a portion of the pixels in two adjacent rows to provide an output signal values. However, Morris discloses that the imager 140 independently sets the duration of the integration interval that is used by each group 113; due to this independent control of the integration durations, the exposure time of each different group 113 may be adjusted to accommodate the brightness of a different portion of the optical image (figure 5, column 3, lines 10-29; 55-62). And Takada et al. discloses a solid-state image pickup device, which includes an integration-time control line Lint for each row of pixels Gmm (figures 1, 4-6, column 12, lines 1-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Morris et al. and Abe by the teaching of Takada et al. to provide a solid-state image pickup device which has the advantage of providing high-quality still images even of moving objects with a simple structure (column 12, lines 54-57).

7. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 6,665,010) in view of Takada et al. (US 6,831,691) further in view of Abe (US 6,747,698).

Regarding claim 21, Morris et al. discloses a color filter pattern (one group of pixels is associated with red color or green color, figure 5, column 3, lines 30-52) spanning at least a portion of the pixels, wherein the color filter pattern forms a plurality of color filter kernels (group of four pixels 113a, 113b, 113c, 113d, one group has red pixel color, another group has green pixel color, figure 5, column 3, lines 5-40) wherein the color filter kernels are arranged in at least two different uniformly distributed sets that are correlated with the color filter pattern (each group of pixels includes 2x2 pixels, figure 5, column 3, lines 5-40).

Morris et al. and Takada et al. fail to specifically disclose the plurality of color filter kernels having at least one color of every color in the color filter pattern in a predetermined arrangement with an identical pattern of colors in each color filter kernel. However, Abe teaches a digital camera 10 in which the color filter 13 is divided into a 2x2 pixel matrix M1, each pixel matrix M1 has the same plurality of colors R, G, B (figure 2, column 3, lines 51-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Morris et al. by the teaching of Abe in order to reduce the chromatic blur which occurs in a reproduced image because of the interpolating process (column 1, lines 40-43).

Regarding claim 22, Morris et al. discloses wherein the color filter pattern is a 2x2 kernel (group of four pixels, figure 5, column 3, lines 5-30).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUONG T NGUYEN/
Examiner, Art Unit 2622
09/26/09